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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,337	12/07/2000	Erdal Paksoy	TI-28759	1461
23494	7590	07/25/2006	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265				ABEBE, DANIEL DEMELASH
ART UNIT		PAPER NUMBER		
				2626

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/732,337	PAKSOY ET AL.	
	Examiner	Art Unit	
	Daniel D. Abebe	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 10-15 is/are allowed.
- 6) Claim(s) 1-9, 16-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

Response to Appeal Brief

In view of the appeal brief filed on 5/15/2006, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura et al. (5,914,752) in view of Kawahara (6,697,775).

As to claim 1 Iwamura teaches a sub band speech coder (Fig.2) comprising:

Means for dividing the speech signal into low frequency band to obtain a low frequency band signal;

Down sampling the low frequency band (21);

Encoding the low frequency band by a low band coder(28);

Obtaining a high frequency band by subtracting said low frequency band from the original signal (30)

Where the high frequency band signal is encoded by high band coder (31).

According to Iwamura "The adder 30 subtracts the low frequency band signal G from the original signal A to produce the differential signal H at the timing thus adjusted by the delay 29. The differential signal H has the frequency characteristic as shown in FIG. 5B. Namely, as a result of subtracting the frequency band of the low frequency band signal B from the frequency band of the original signal A, only the high frequency band component remains. The differential signal H is supplied to the coder 31 which performs the predetermined coding and supplies the coded signal to the recording system 13 as the differential signal I" (Col.6, lines 20-30).

With regard to the claimed down sampling factor, Iwamura doesn't suggest implicitly or otherwise where factors other than the given $\frac{1}{2}$ can be implemented.

Iwamura doesn't teach a combiner. Kawahara teaches an audio coding method where audio signal is divided into higher band and lower band and separately encoded and combined (Fig.16, 20). It would have been obvious to one of ordinary skill in the art to recombine the two encoded signals in Iwamura's art for said recording or transmission purpose of the encoded signal.

As to claim 2, Iwamura teaches where the high band signal is generated, but doesn't teach a band pass filter. However, Official Notice is taken that band pass filter is a well known device in the art of speech processing and it would have been obvious to use it in Iwamura's teaching as an alternative way for generating said high band signal.

As to claim 3 Iwamura teaches where the down sampled lowband signal is upsampled (Fig.2).

As to claims 4-9, Official Notice is taken that all the claimed encoding techniques are well known in the art and could be utilized in Iwamura and Kawahara teaching for coding the signals.

Claims 16-20 citing the corresponding decoder for reproducing the encoded signal are analogous to the encoder claims and are rejected by Iwamura and Kawahara for the foregoing reasons.

Allowable Subject Matter

Claims 10-15 are allowed.

Response to Arguments

Applicant's arguments with respect to the rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Abebe whose telephone number is 571-272-7615. The examiner can normally be reached on monday-friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Abebe Primary Examiner A.U. 2655



July 10, 2006